

# Bremerton Gas Works Superfund Site

Project Scoping Meeting  
September 9, 2014

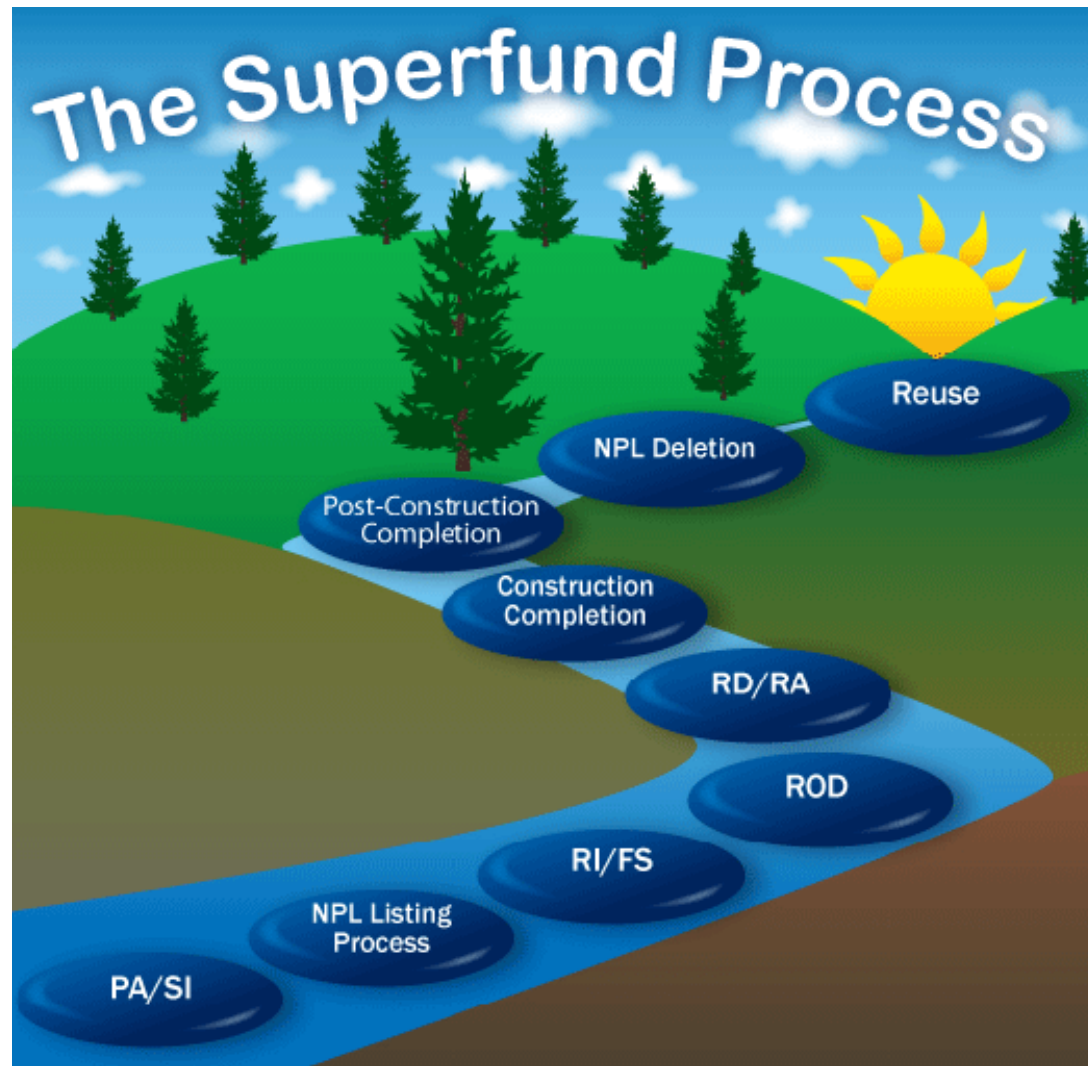
# Meeting Purposes

- To update attendees about site-related activities and schedule for future work
- To present site history/background and initial planning of the site investigation
- To hear from you

# Meeting Objectives

- Provide attendees with an overview of the Superfund process
  - Explain how site-related activities relate to that process
  - Relay the general timeline for near-term activities
- Provide site background information
- Discuss initial thinking about scope of upcoming site investigation
- To answer your questions and take your input on our work at the site

# Superfund Process Overview

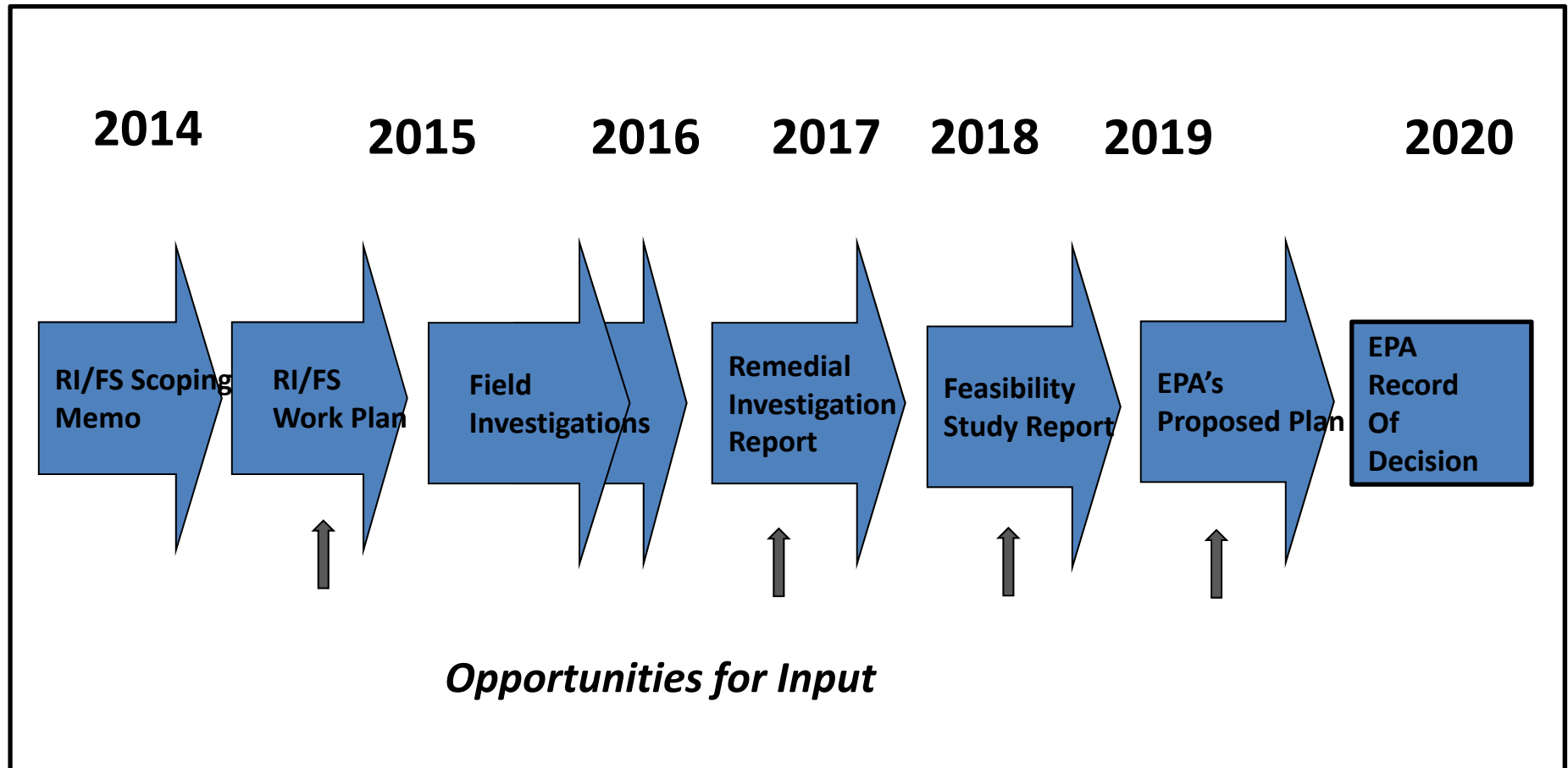


# Remedial Investigation/Feasibility Study

- RI/FS Scoping
  - Define known information to help identify needed data gathering efforts
- Work Plan Development
  - Define data collection activities, methodologies and quality control practices
- Remedial Investigation
  - Define the nature and extent of contamination
  - Determine risks to human health and the environment
  - Collect data for treatability studies (if necessary)
- Feasibility Study
  - Develop, screen and evaluate remedial action options

# Current Project Schedule

(Subject to change, if necessary to meet project requirements)



# Near-Term Project Schedule

- Final Scoping Memo – Fall 2014
- Draft RI/FS Work Plan – Fall 2014
- Final RI/FS Work Plan – Spring 2015
- Commence RI/FS Field Investigation Work – Summer 2015

Red = Opportunities for input/comment

# HISTORY AND BACKGROUND

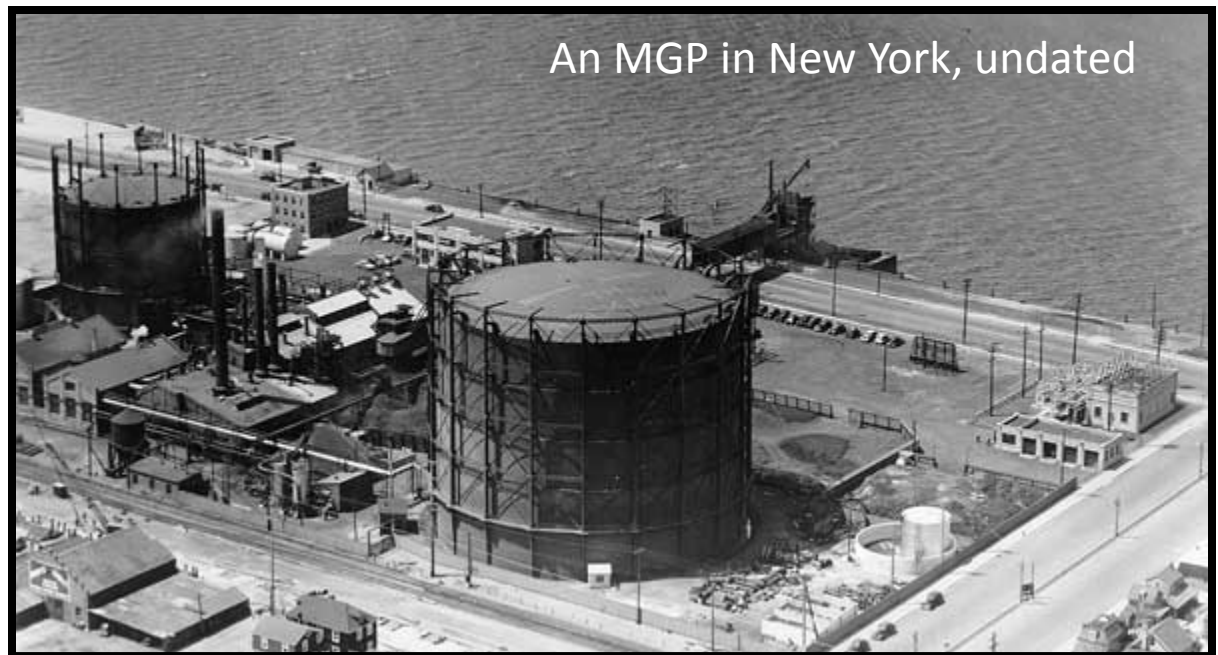
# History of MGP in the US



Portland, Oregon GasCo MGP, undated

# MGP Chronology

- 1816 – Baltimore, Maryland  
First commercial gas lighting of residences, streets and businesses
- 1850s – East of the Mississippi River  
Most towns of 10,000+ residents had MGPs
- 1852 –  
San Francisco  
First MGP on the  
West Coast



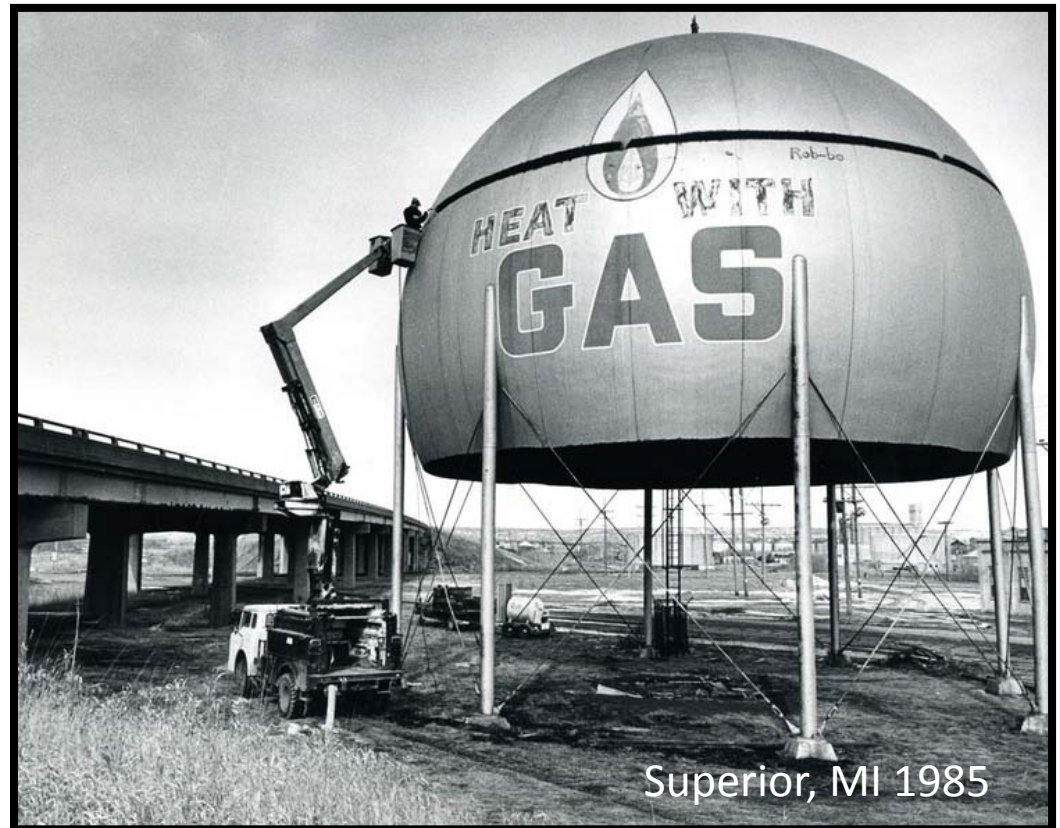
# MGP Chronology

- 1877-1900 – Expansion across US
- 1901-1919 – Peak of Manufactured Gas

Carburetted water gas process brought manufactured gas to towns with populations of just a few thousand residents

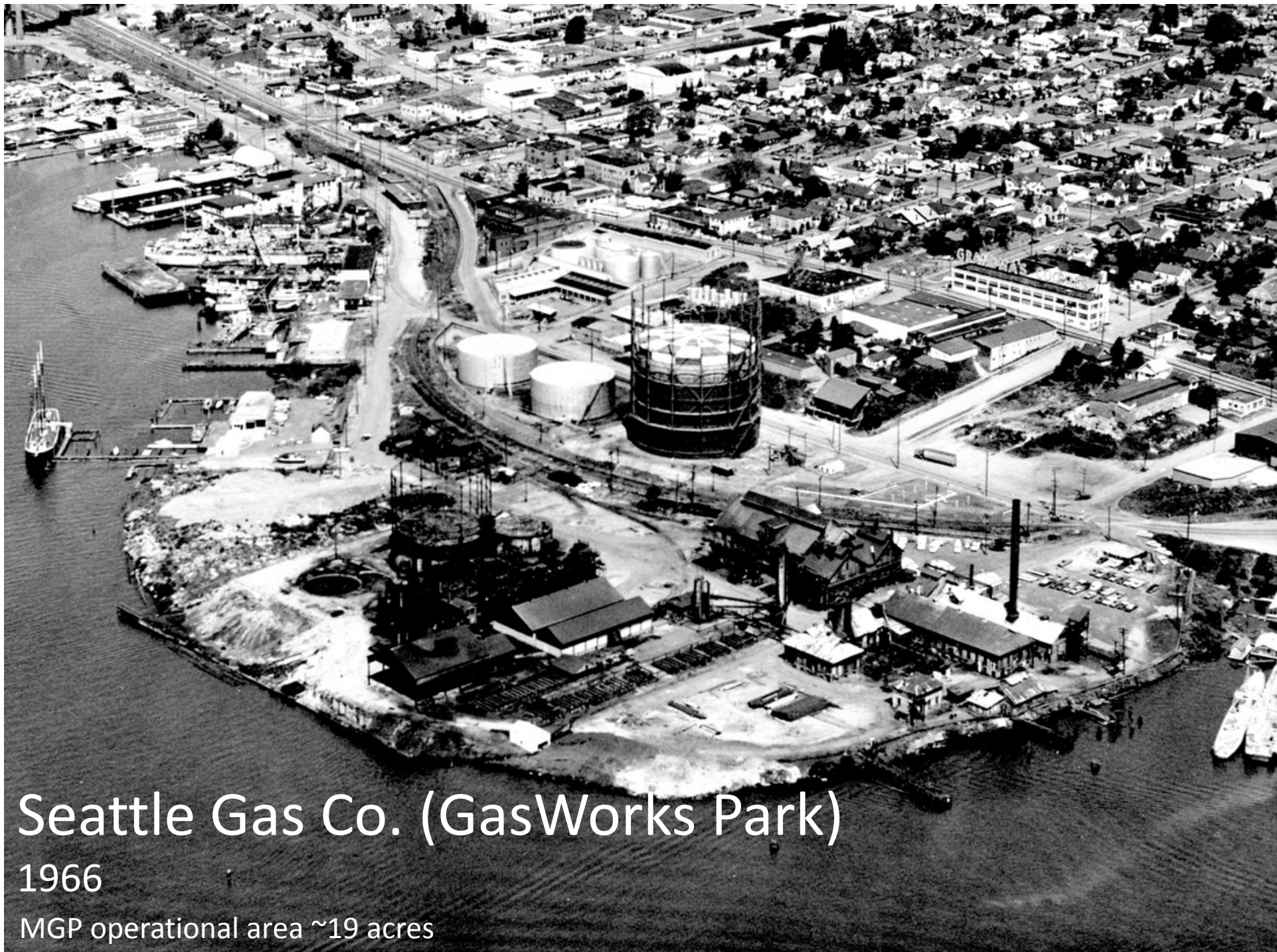
- Estimated total of 52,000 MGPs in the US

(circa 1815 – circa 1960)



# MGP Chronology

- Gas lighting replaced by electricity
- Transition to providing other home services
  - Space and water heating and cooking
- Improvements made in long-distance pipelines
- Last “town” MGP facility closed by 1966.



# Seattle Gas Co. (GasWorks Park)

1966

MGP operational area ~19 acres

# Bremerton Gas Works

1952/53

MGP operational area ~1 acre





Phinney Bay

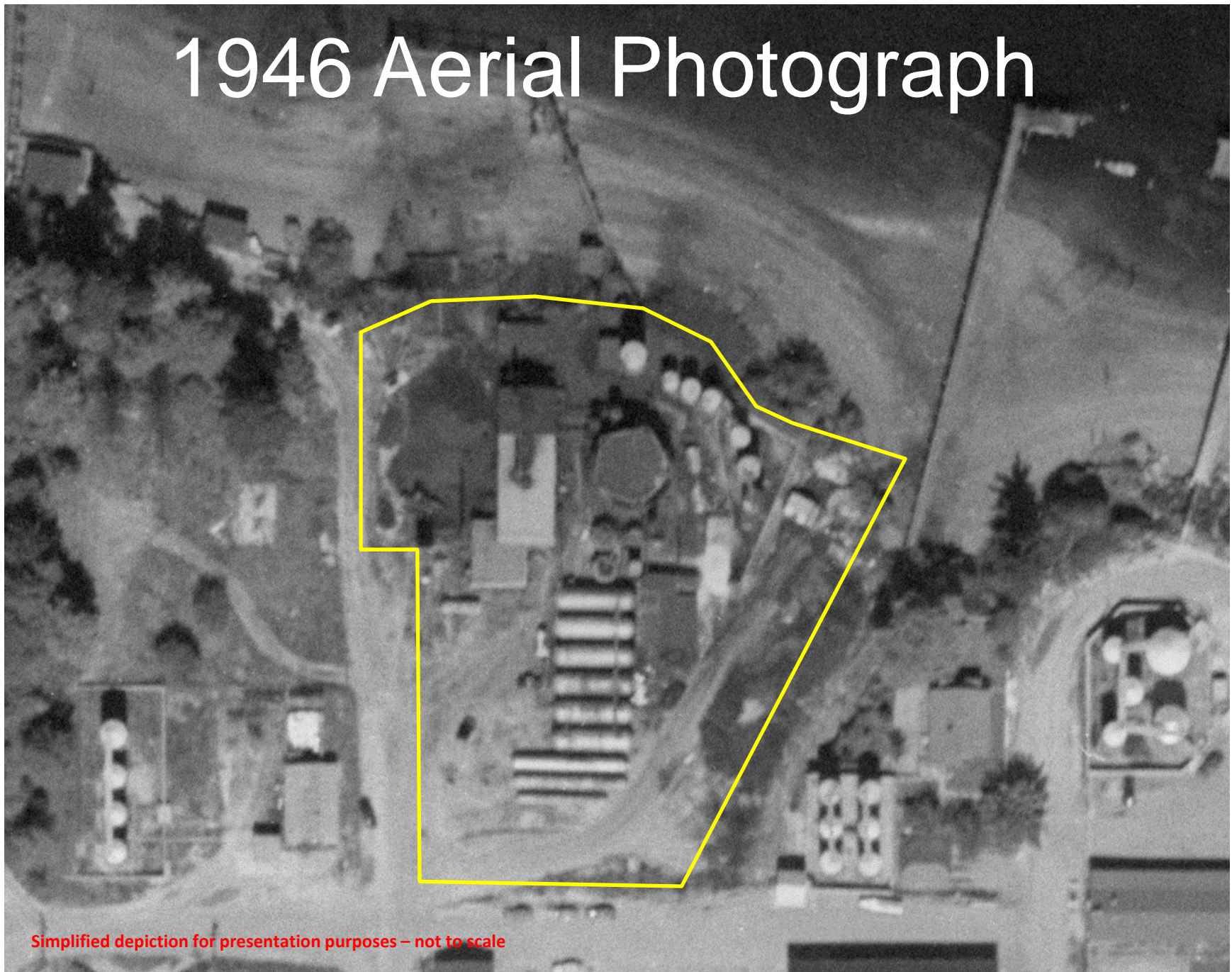
Dyes Inlet

Port Washington Narrows

Bremerton Gas Works

Sinclair Inlet

# 1946 Aerial Photograph



Simplified depiction for presentation purposes – not to scale



Former Gas  
Works Location

The image is an aerial photograph of a coastal area. In the top left, a marina with several boats is visible. Below it, a yellow rectangular box highlights a specific area. To the right of this box, two adjacent properties are outlined in black. The larger, irregularly shaped property on the left is filled with a yellow grid pattern and labeled 'McConkey Property'. The smaller, more rectangular property on the right is labeled 'Sesko Property'. The background shows a mix of residential houses, parking lots, and greenery along the waterfront.

McConkey  
Property

Sesko  
Property

Simplified depiction for presentation purposes – not to scale

# Timeline of Historical Property Uses

Petroleum Dock

MGP Dock

Sesko Dock

Petroleum Dock

Manufactured gas  
production 1931-1955  
Propane blending  
1955-1963

McConkey  
Property

Bulk fuel  
storage  
(1940s-2013)

Sesko  
Property

Bulk fuel storage  
(1940s-1980s/90s)

Bulk fuel storage  
1941-1980

Simplified depiction for presentation purposes – not to scale

# Timeline of Historical Property Uses

Boat maintenance, auto parking/salvage, and equipment storage 1992-2006

Light industrial use  
1963-current

\*(southern property light industrial use from the 1940s)

McConkey  
Property

Sesko  
Property

Simplified depiction for presentation purposes – not to scale

# **MANUFACTURED GAS PROCESS**

Material  
Handling &  
Storage

MGP Dock

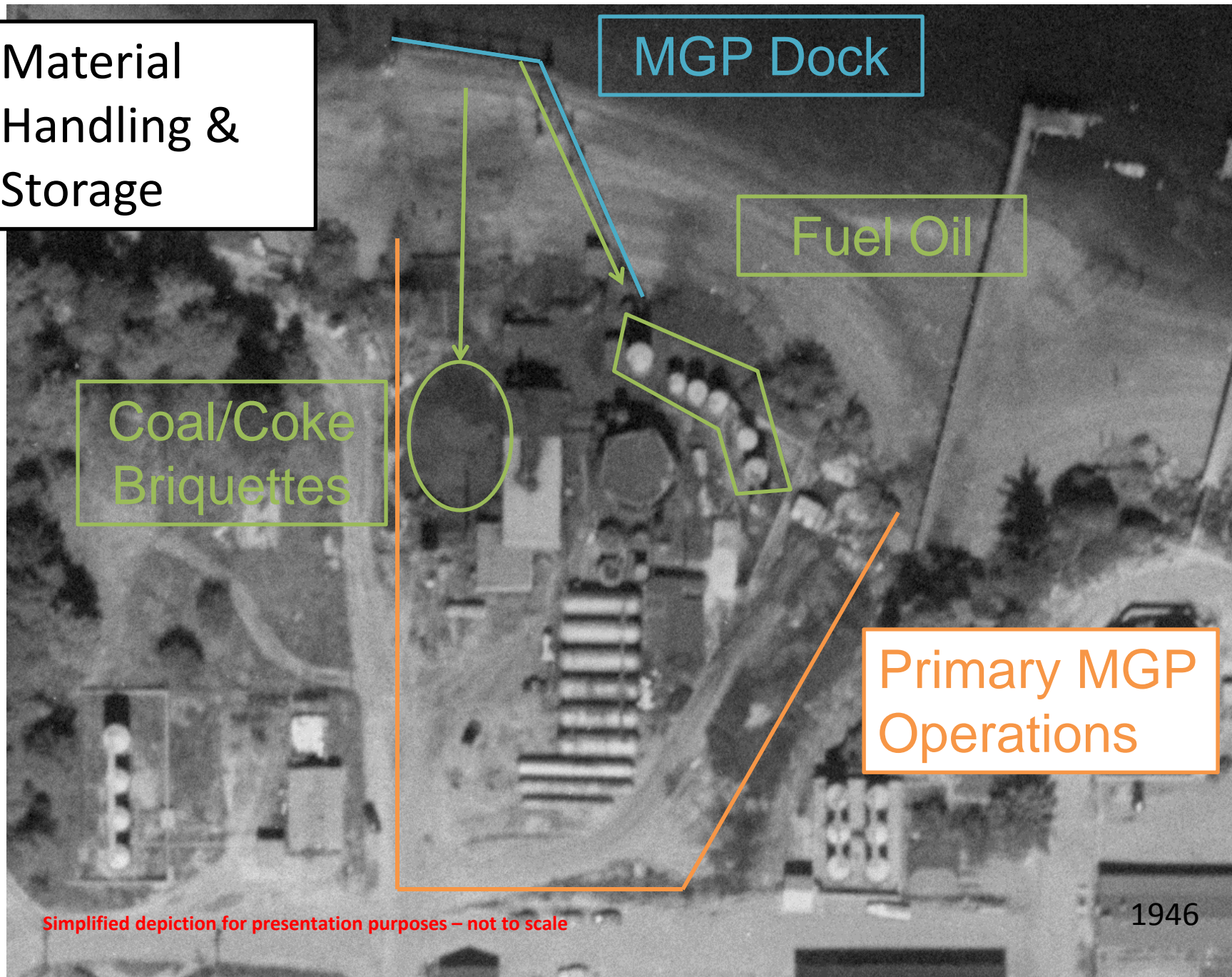
Fuel Oil

Coal/Coke  
Briquettes

Primary MGP  
Operations

Simplified depiction for presentation purposes – not to scale

1946



# Process Description

Furnaces

Scrubber

Gas Holder

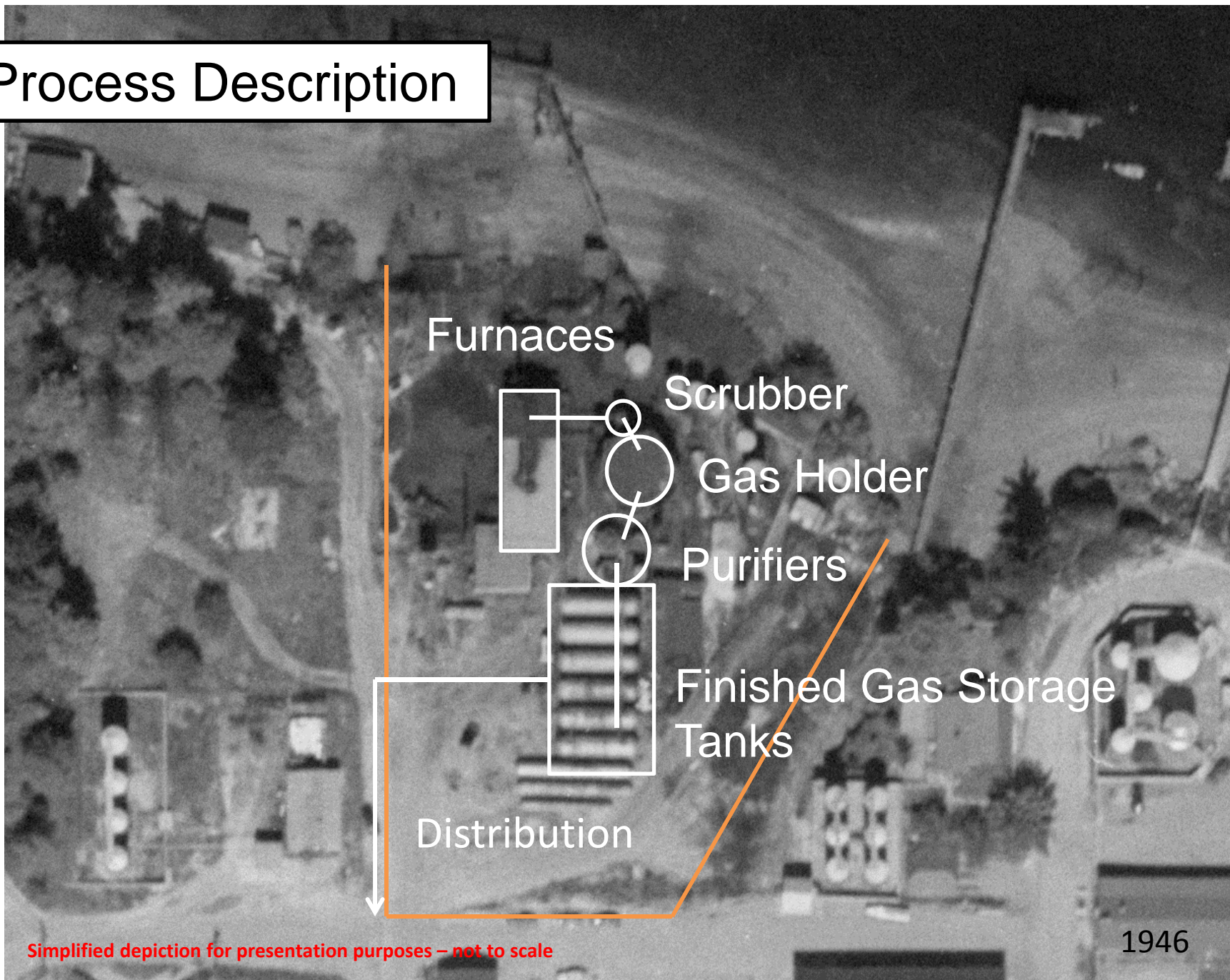
Purifiers

Finished Gas Storage  
Tanks

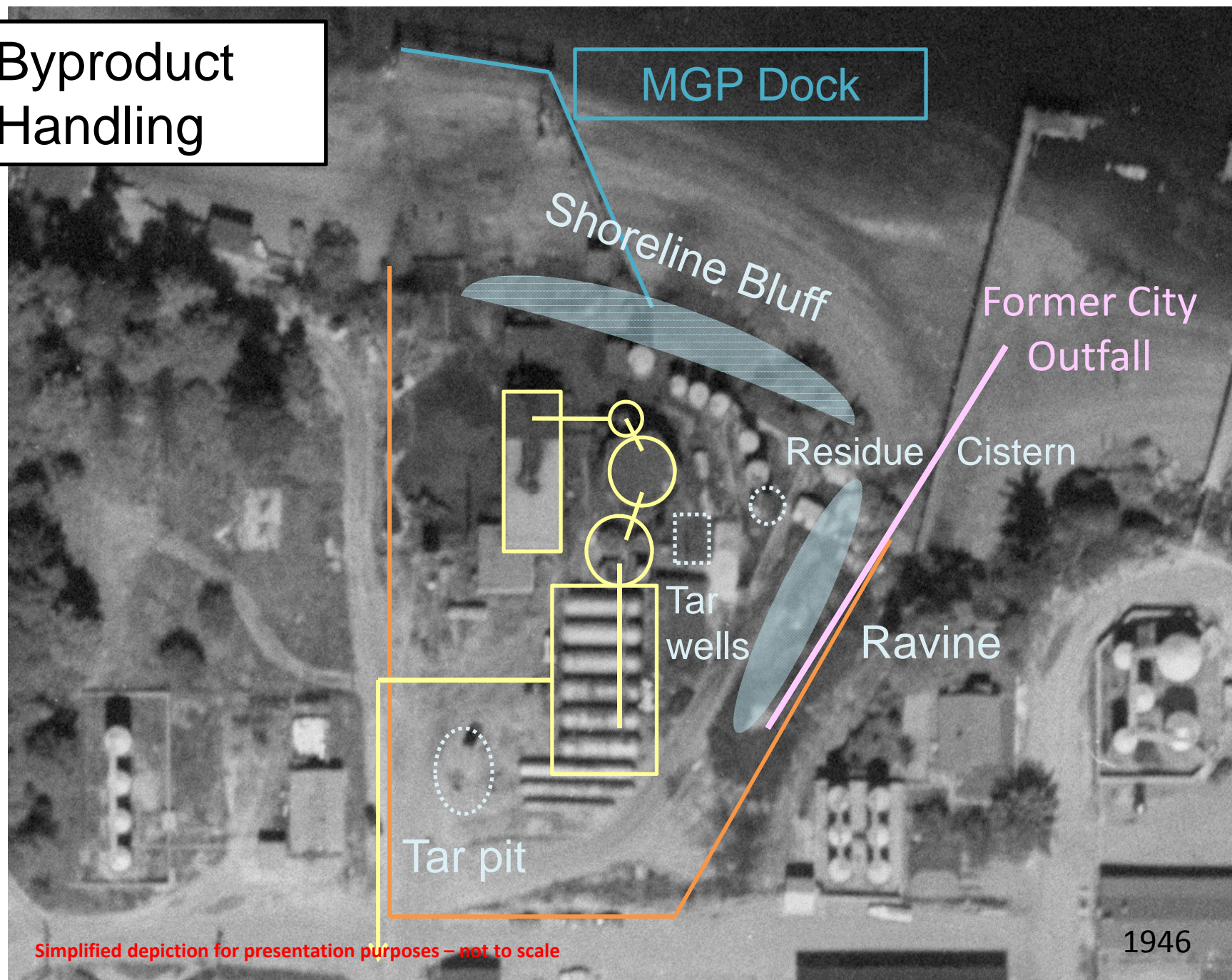
Distribution

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1946



# Byproduct Handling



1946

# PREVIOUS INVESTIGATIONS AND ACTIONS

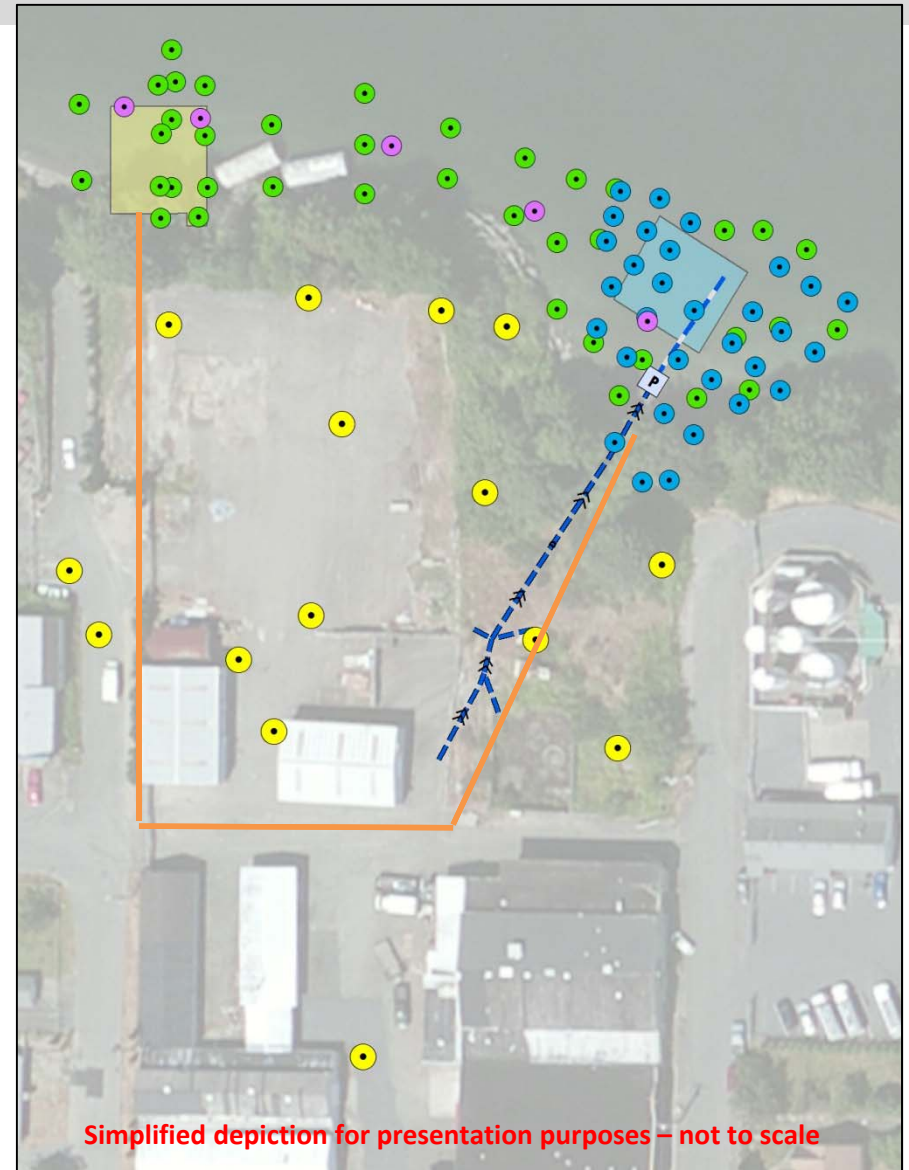
# Previous Investigation Results

## Soil & Groundwater

- MGP and Petroleum-Related Chemicals
  - Benzene
  - Naphthalene
  - Polycyclic Aromatic Hydrocarbons (PAHs)
- Other Chemicals
  - Metals (copper, arsenic, nickel, chromium)

## Sediment

- PAHs



# Time Critical Removal Actions

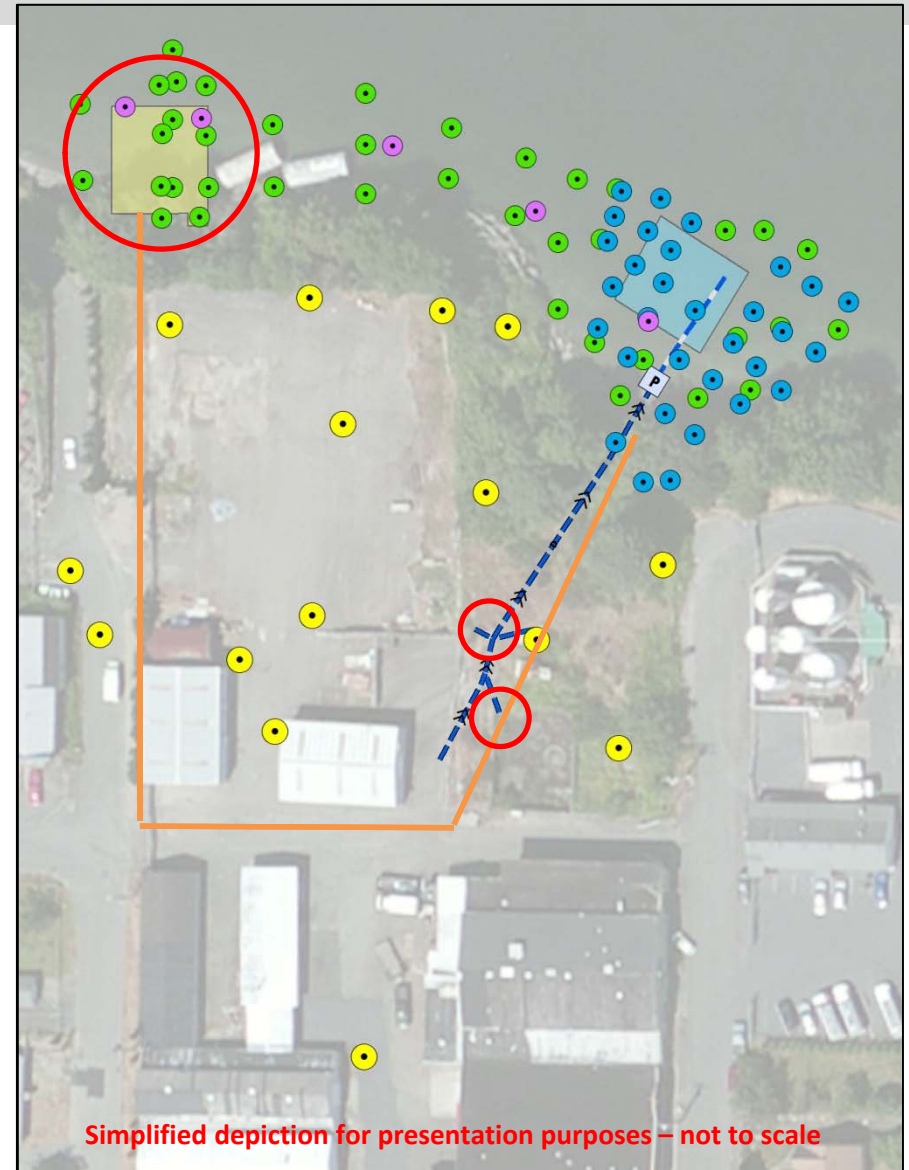
(TCRAs)

## 2010

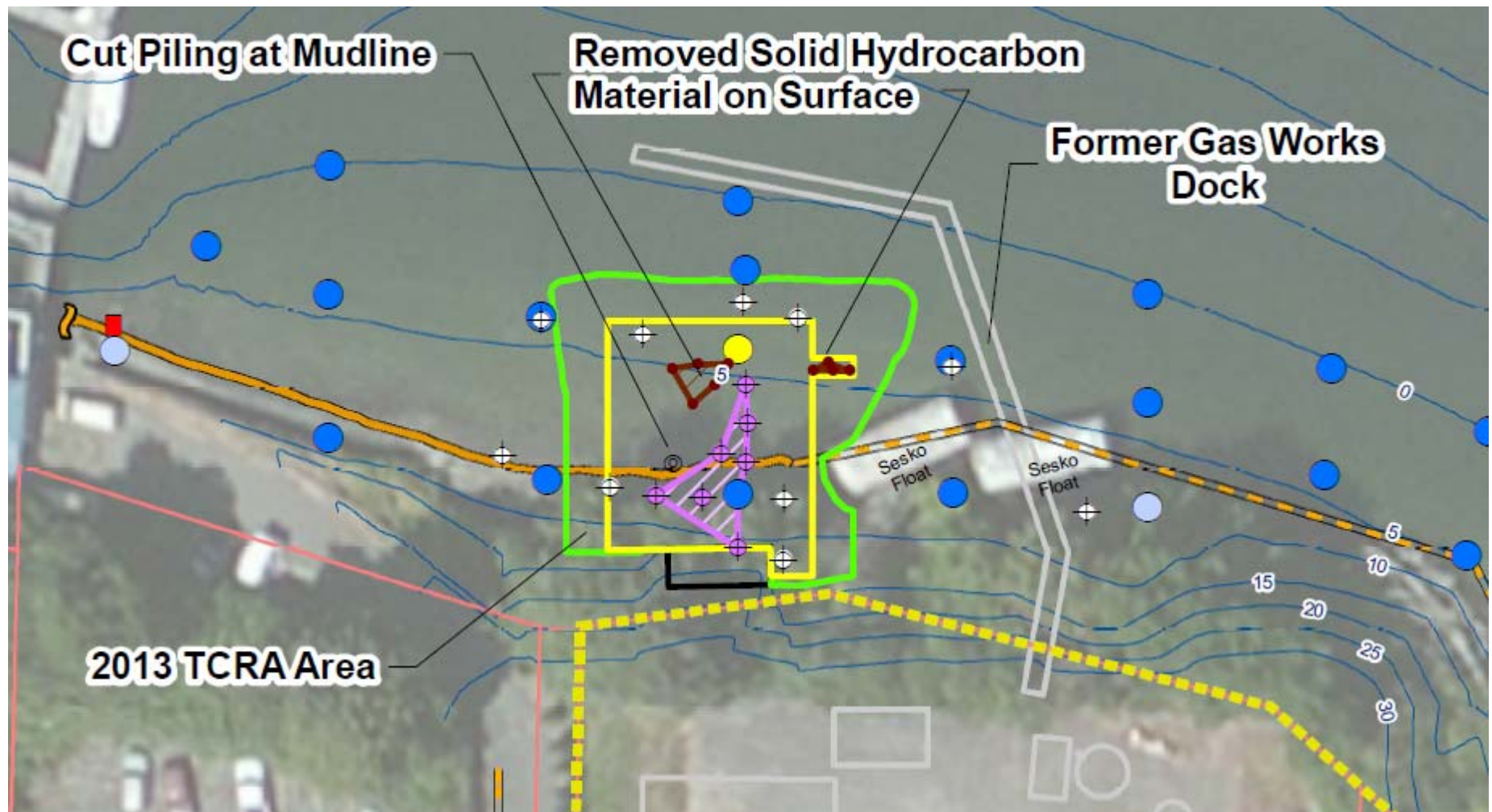
- Former Drainage Line cut and plugged
- Mat placement

## 2013

- Mat placement
- Capping of Manhole A
- Drain line plugging



# 2013 TCRA



# 2010 TCRA Photos



# 2013 TCRA Photos



# Extent of MGP-related chemicals

\*\* (based on sampling to date)



# **INITIAL SCOPING CONSIDERATIONS**

# Remedial Investigation/Feasibility Study (RI/FS)

## General Objectives

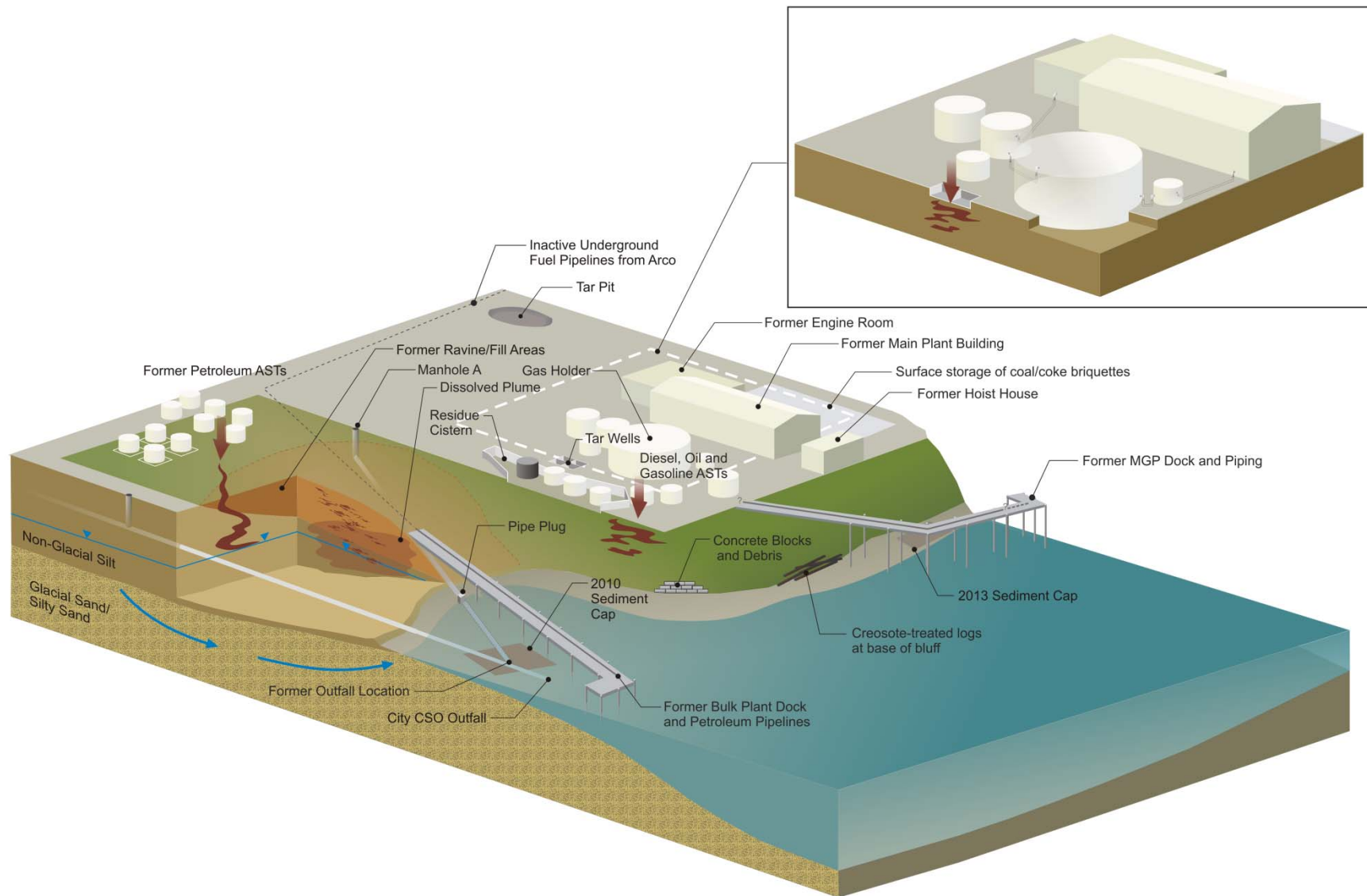
- Define the lateral & vertical extent
- Evaluate migration & transport pathways
- Provide sufficient data to evaluate risk to human health and the environment

# Remedial Investigation/Feasibility Study (RI/FS)

## General Objectives

- Collect data to support the evaluation of remedial alternatives, such as:
  - Containment
  - Removal/ex-situ treatment and disposal
  - In-situ treatment
  - Institutional controls

# Preliminary Conceptual Site Model



# RECEPTORS AND PATHWAYS

Receptors

Human  
Health

Aquatic  
Ecological  
Receptors

Terrestrial  
Ecological  
Receptors

Exposure  
Pathways

- Direct Contact
- Ingestion
- Inhalation
- Consumption of Organisms

Site  
Conditions

- Soil, Groundwater, Dust/Vapors
- Sediment, Porewater, Surface water, Fish/Shellfish

# Potential Upland Investigation Approach

## Surface explorations:

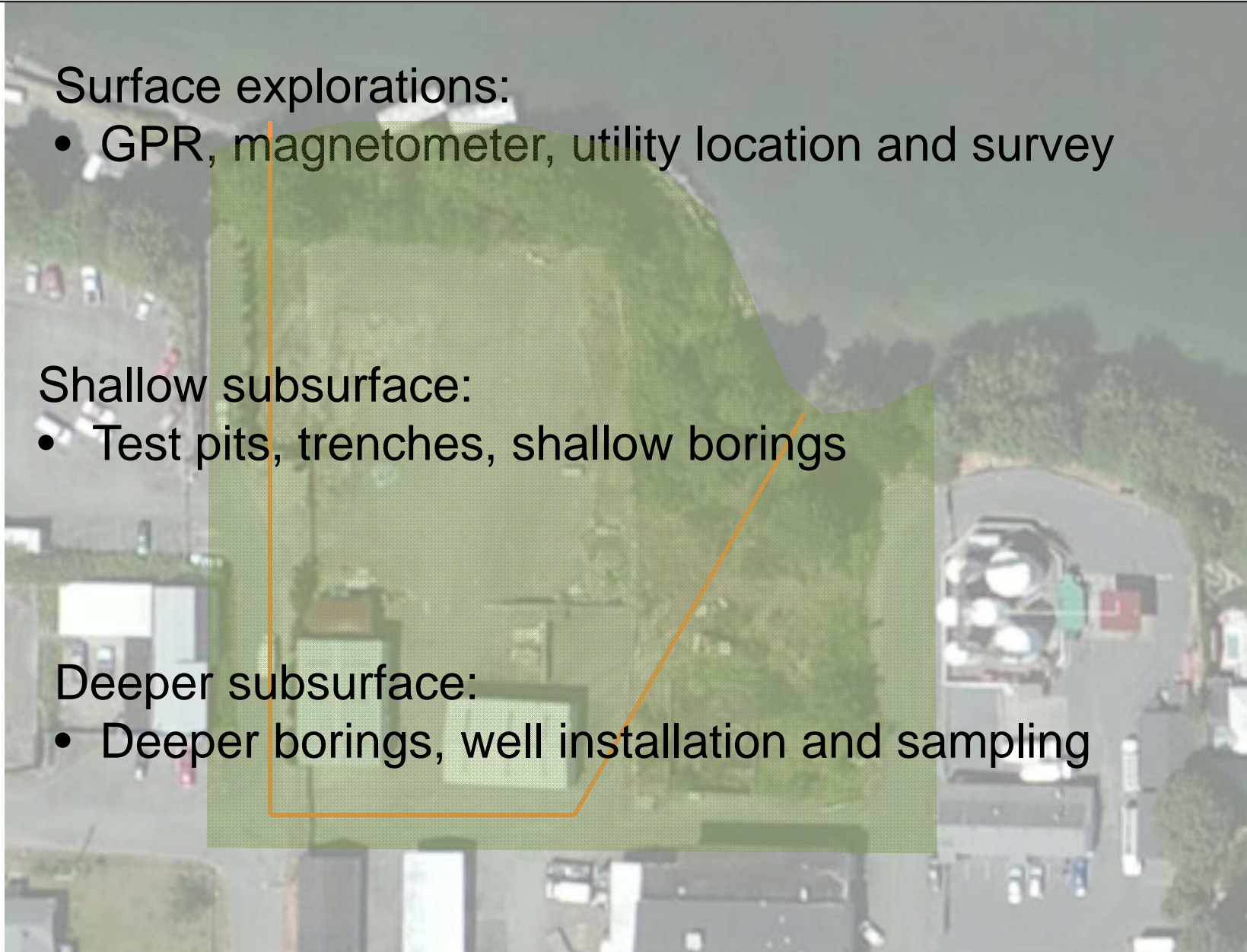
- GPR, magnetometer, utility location and survey

## Shallow subsurface:

- Test pits, trenches, shallow borings

## Deeper subsurface:

- Deeper borings, well installation and sampling



# Potential Sediment Investigation Approach

- Beach survey/sub-tidal video survey
- Surface and subsurface sediment sampling
- Porewater sampling
- Surface water sampling



Find Information about the Site at

<http://go.usa.gov/bpWz>